

MILLENNIUM PIPELINE COMPANY, L.P.

Data Request No. 9

During our consultations with National Marine Fisheries Service, we were informed that Haverstraw Bay is a known habitat of the shortnose sturgeon (although it is not a spawning area as reported in your filings), that construction across the Bay would result in direct impacts on this fish, and that formal consultation probably would be required. However, if Haverstraw Bay was avoided, then formal consultation may not be needed for a Hudson River crossing. Therefore, please provide environmental, engineering, and economic details on the following alternatives that would cross the Hudson River at a point about 3.3 miles north of the proposed crossing near MP 378.9 within the Haverstraw Bay (see attachment 2).

- a. Alternative 1 would follow the Algonquin Gas Transmission Company (Algonquin) right-of-way from a point near the Ramapo Meter Station near MP 377.9 and would cross the Hudson River north of Tomkins Cove, New York (on the west) and Verplanck and Buchanan, New York (on the east). The overland portion of the alternative to the Hudson River would be about 9.95 miles long and the Hudson River crossing would be about 1.0 mile wide. Provide information on the feasibility of a horizontal direction drill (HDD) at this alternative Hudson River crossing location. On the east side of the Hudson River, Alternative 1 would follow Algonquin eastward for about 0.7 mile and would cross Broadway. At a point east of the substation on Broadway, Alternative 1 would cross over to the north side of the powerline corridor located about 0.1 mile to the south of Algonquin. It would then follow the powerline for about 1.5 miles crossing the New York-Albany Post Road, the Metropolitan Transit Authority railroad tracks, and U.S. Route 9. It would meet the proposed route near MP 391.7 on the east side of the powerline right-of-way. The overland portion of Alternative 1 on the east side of the Hudson River would be about 2.3 miles long.
- b. Alternative 2 would begin near MP 385.1 at the intersection of a powerline by following that powerline westward for about 0.95 mile and crossing U.S. Route 202. It would then bear northwestward along another utility corridor for about 0.6 miles crossing the Minisceongo River and Ivy Road. Alternative 2 would then bear northward east of Letchworth Village State Mental Hospital and would cross Suffern Road

and Willow Grove Road. It would continue northward through a saddle on Rider Hill until it intersects with the Algonquin right-of-way about 0.1 mile southwest of Cedar Flats Road. Alternative 2 would then continue along the Algonquin right-of-way to cross the Hudson River at the same location as Alternative 1 and would continue with the same alternative routing as Alternative 1 on the east side of the Hudson River.

Supplemental Response:

The results of the analysis of the environmental, engineering, and economic consequences of Alternatives 1 and 2 are presented below. These analyses are supported by in-field observations recorded on March 5, 1999, by Richard E. Hall, Jr. (Permits Manager), James R. Albitz (Design Manager), John Hougland (Construction Manager), and Pete Walker (Chief Inspector). Drawing 8525-GIS-5300 (attached) depicts the proposed locations of Alternatives 1 and 2 and the location of the proposed Millennium Pipeline route. Both alternatives would require that Millennium construct a lateral to serve the Bowline Generating Station. It is assumed that the lateral would follow Millennium's proposed route from the Buena Vista M & R Station to Bowline, for a total distance of about 4.1 miles.

Consultation between Millennium and the NMFS (letters from NMFS dated December 16, 1997; and June 11, 1998) indicated that the shortnose sturgeon uses habitats in the Hudson River between the George Washington Bridge and the Federal Lock and Dam in Troy; and that the general Haverstraw region provides seasonal habitat for this species.

a. Alternative 1

Alternative 1 departs from the proposed Millennium Pipeline route near the Ramapo Meter Station at MP 377.9, and would be about 13.3 miles long (excluding the lateral to Bowline). Alternative 1 thus routes around most of the existing Columbia Gas Transmission Corporation Line 10338 that would be incorporated into the Millennium Pipeline Project.

Alternative 1 follows the existing Algonquin right-of-way (ROW) for its entire length on the west side of the Hudson River and across the river. On the east side of the river, this alternative would utilize both the Algonquin corridor and an existing Consolidated Edison (ConEd) ROW, as well as new ROW. While the alternative follows existing corridors for all but about 700 feet, the existing Algonquin ROW in Rockland County is only about 75 feet wide. It currently contains from 2 to 3 pipelines, a cathodic protection line, and in some locations an AT&T line. Alternative 1 would be adjacent to these existing ROWs, where possible.

The first 3.7 miles of the Alternative 1 lie within Harriman State Park, listed on the National Register of Historic Places. This portion of Alternative 1 includes significant

stretches of difficult sideling construction that would require extra work space. After leaving state park lands, Alternative 1 crosses Calls Hollow Road. There is residential development along Calls Hollow Road, and the crossing is located at a point where sideling construction would occur in an area of shallow or exposed bedrock. Blasting may be required in this area. Alternative 1 then enters a municipal park that was once part of the Letchworth Village State Mental Hospital grounds. North of Willow Grove Road, Alternative 1 crosses additional residential land before reaching the Palisades Interstate Parkway, which is listed on the National Register of Historic Places. Alternative 1 would require a re-route around residential development near Willow Grove Road.

After crossing the Palisades Interstate Parkway, Alternative 1 passes through a residential subdivision before reaching Old Gate Hill and Cedar Pond Roads. Alternative 1 would require reroutes around residential development near Zachary Taylor Street and Pierce Drive. In this area, the Letchworth Village Development Center is located to the south and Harriman State Park is located to the north. On the north side of Cedar Pond Road, Algonquin has a meter and regulating facility (Stony Point Meter Station #40) and Orange and Rockland Utilities (Regulating Station #91) shares the same space. Continuing northeast, Alternative 1 passes through more residential land and then over Bentons Point, through the Timp Mountain Creek valley, across Bulsontown Road, over Franck Road, northwest of Lake Boyce, and up and across Buckberg and Bulkbarg Mountains. More residential land is located near the Franck Road crossing. Alternative 1 would require a reroute around this residential development in the Bulsontown Road, Franck Road, and Richard C. Brown Drive area. A Boy Scout of America camp and other camps are present on the mountain slopes. In addition, previously reported cultural resources are present. On the northeast side of Bulkbarg Mountain, the ROW crosses Buckberg and Mott Farm Roads as it descends the Hudson Valley escarpment. A reroute would be required around the residential development at Mott Farm Road. Between Mott Farm Road and North Liberty Road (NY 9W and US 202), Alternative 1 passes just southeast of a small, isolated parcel of Harriman State Park land.

The location of Alternative 1 between North Liberty Road and the Hudson River is extremely congested. At this point, Algonquin has at least 2 pipelines. In addition, Alternative 1 crosses a powerline, possibly a water line, railroad, access road, and ends above the water on a steep bench. Workspace is not available on the west side of the river to stage either a conventional or HDD crossing, due to the presence of a house and infrastructure.

On the east shore of the river, the Algonquin ROW passes between the Indian Point Generating Station and the LaFarge Gypsum plant. There is insufficient room for Millennium to stage a conventional or HDD river crossing on this shore or adjacent to the existing ROW. At the river's edge, which is steep and rock faced, Algonquin's existing mainline valves and a launcher/receiver block any approach from the river side and use all the the limited space that is available. To the south, a steep rock cliff, a natural drainage and associated wetlands fill the short distance between the existing

facilities and the gypsum plant. Ship moorings are present in the Hudson at the mouth of the secondary drainage. To the north, there is insufficient space between the Algonquin facilities and the Indian Point facility.

Beyond the east shore of the Hudson River, the Alternative 1 alignment joins the ConEd ROW. The ConEd ROW is restricted at the Route 9A crossing. Bedrock is exposed at this location. Between Route 9A and the Alternative 1 point of intersection with the original proposed Millennium Pipeline route, the built environment includes a bridge crossing, a railroad crossing, additional road crossings, and an existing powerline ROW that already is close to residences.

The length of Alternative 1 is approximately 13.3 miles, compared to approximately 8.4 miles of new construction for the proposed Millennium Pipeline route (excluding 5.4 miles of existing Columbia Gas Transmission Corporation's Line 10338 within a no-build section of the Project).

Among the major environmental factors that would affect the use of Alternative 1 are:

- Additional permanent ROW and construction work space requirements within Harriman State Park
- Permanent ROW and construction work space requirements within the municipal park on the former grounds of the Letchworth Village State Mental Institution
- Additional residences within 50 feet of the construction work space at Calls Hollow Road, Old Gate Hill Road, Zachary Taylor Street, Cedar Pond Road, Franck Road, Richard C. Brown Drive, Mott Farm Road, and off of North Liberty Road (NY 9W and US 202)

New ROW will likely be required to construct near the housing developments

A house on the west side prevents access to cross the Hudson River adjacent to the Algonquin ROW

- Alternative 1 adds about 9 miles of construction to the proposed route, which will increase overall environmental and cultural resources impacts
- A lateral must be constructed to Bowline

In addition to these observed environmental factors, there are other issues that would need to be addressed in order to develop a full understanding of the potential environmental impacts associated with Alternative 1. These include additional stream crossings, additional wetland crossings, and possible additional involvements with federal or state listed endangered species. Although the relocation of the Hudson River crossing is being proposed in order to address concerns for potential impacts of the Project on the endangered shortnose sturgeon (*Acipenser brevirostrum*), additional coordination would need to be conducted with the National Marine Fisheries Service (NMFS) to determine whether this alternative location would be more acceptable. Additional coordination would also need to be conducted with NMFS and other agencies regulating activities in or along the Hudson River to determine whether other protected species and other environmental and cultural resources are present further north of the Haverstraw Bay location.

As regards the cultural resources issues, known prehistoric and historic resources have been identified in the near vicinity of Alternatives 1 and 2. The sites range from isolated artifacts to extensive shoreline middens. The sideling routing through Harriman State Park is considered to be low probability loci for the location of cultural resources because of slope. However, once the Park slope is passed, the settings are considered medium to high probability locations for the occurrence of both prehistoric and historic resources. The Timp Mountain Creek valley, the nearby mountains, and the both shoreline settings (despite extant disturbance) are considered high probability localities for the occurrence of prehistoric resources. As regards historic resources, it is anticipated that the density of potentially eligible resources, outside of the Letchworth Village vicinity, will be relatively light, as both this alternative and Alternative 2 follow previously cleared ROWs for most of their routings. Consultation with the Rockland County Historical Society is imperative as this group is presently formulating an extensive list of potentially eligible resources, many of which are linear and engineering features. Finally, underwater investigations will have to be completed of any alternative proposed Hudson River crossing. Millennium's initial crossing of Haverstraw Bay avoided the multiple submerged cultural resources known to be present in that feature.

The Hudson River crossing associated with both Alternatives 1 and 2 would be about 5,400 feet long. The crossing of the Hudson River by utilizing HDD techniques at or near this location does not appear to be practical due to the lack of a staging area to lay and weld the pipe string sections for pullback. Typically HDD crossings of this length and magnitude require that the pipe string be pulled into the drilled hole in one continuous pull section. Millenium was not able to find an alignment that would be suitable for welding a continuous 5,400-foot section of pipe.

A preliminary estimate, based on limited field observations, indicates that construction of Alternative 1 would cost at least \$6,000,000 more than the proposed route. This cost estimate does not include the lateral to Bowline.

Summary for Alternative 1

Alternative 1 would involve approximately 4.9 miles of additional pipeline construction compared to the Millennium Pipeline route, and cost at least \$6,000,000 more than the proposed route. Much of Alternative 1 is sited either on state park land, municipal park land, or within heavily built-up residential areas. Thus, this alternative would affect more sensitive upland land use areas than the proposed route.

Alternative 1 would avoid the Haverstraw Bay area of the Hudson River. This may help to reduce project-related environmental impacts on endangered species and significant fisheries habitat. In addition, the Hudson River crossing for Alternative 1 would be less than half as long as the Haverstraw Bay crossing. However, the specific Alternative 1 location of the Hudson River crossing lacks necessary area for staging construction activities.

b. Alternative 2

For purposes of comparing the 2 alternatives to the proposed Millennium Pipeline route, the beginning of Alternative 2 was placed at the beginning of Alternative 1. Alternative 2 follows the proposed Millennium Pipeline route to a point near MP 385.4. This section of the proposed Millennium Pipeline route includes 5.4 miles of existing Columbia Gas Transmission Corporation's Line 10338 within a no-build section of the Project and 2.1 miles of construction along the proposed route between MP 383.3 and 385.4. Alternative 2 departs from the proposed Millennium Pipeline route near MP 385.4. Alternative 2 follows an existing electric transmission ROW through a portion of Palisades Interstate Park, a National Register property, to US 202. The total length of this alternative is about 13.1 miles (excluding the 5.4 mile no-build section of existing Line 10338 and the lateral to Bowline).

Between US 202 and the intersection with Alternative 1 at the Algonquin pipeline ROW, Millennium could not locate any existing corridors for Alternative 2 to follow. This section of Alternative 2 would be built on new ROW. Although USGS topographic mapping indicates that ample space is available for a new pipeline ROW through this area, the base map dates to 1955 and does not depict the significant expansion of residential neighborhoods that has subsequently occurred in this area.

After crossing US 202, Alternative 2 leaves existing ROW and passes through a residential subdivision and crosses Minisceongo Creek before entering a municipal park that was once part of the Letchworth Village State Mental Hospital grounds. Alternative 2 then crosses Thiells-Mt. Ivy Road, an additional segment of municipal park, and Letchworth Village Road before crossing the grounds of the Letchworth Village Development Center, elements of which are considered potentially eligible to the National Register of Historic Places. After crossing Willow Grove Road, Alternative 2 passes through another residential subdivision, another municipal park, and a third residential subdivision before joining the proposed route of Alternative 1 south of the Old Gate Hill Road crossing. From that point east, Alternative 2 is identical to Alternative 1.

Given the nature of the built environment along Alternative 2, Millennium was not able to locate a route that would be constructable in this area. Numerous houses would have to be condemned in order to construct this alternative. Thus, Millennium believes that this alternative is not viable.

Although Alternatives 1 and 2 are identical for much of their length, Alternative 2 is significantly inferior to Alternative 1; and it is Millennium's belief that this route is not constructable. Alternative 2 would involve construction on new ROW through the area between US 202 and the Algonquin ROW, which includes residential subdivisions, several municipal parks, and the grounds of Letchworth Village Development Center. The environmental factors that would affect selection of Alternative 2 include:

- New permanent ROW and construction work space requirements within the municipal park on the former grounds of the Letchworth Village State Mental Institution
 - New permanent ROW and construction work space requirements within the grounds of the Letchworth Village Development Center
 - New permanent ROW and construction work space requirements within the municipal park north of Letchworth Village Development Center
 - Residences within 50 feet or less of the construction work space at numerous locations, including Cedar Pond Road, Franck Road, Richard C. Brown Drive, Mott Farm Road, and off North Liberty Road (NY 9W and US 202)
- Construction of a lateral to Bowline

A discussion of cultural resources issues if presented above under alternative 1. The location of the Hudson River crossing for Alternative 2 is the same as for Alternative 1. Thus, the comments with respect to the river crossing issues for Alternative 1 would also apply to Alternative 2.

Given that Millennium was unable to locate a viable route for Alternative 2, an economic analysis was not performed.

Summary for Alternative 2

It is Millennium's belief that Alternative 2 is not a viable route

Conclusion

Although Millennium believes that Alternatives 1 and 2, as discussed herein, are not viable routes, we will continue to investigate alternative routes and Hudson River crossing locations to the north of Haverstraw Bay.

Prepared by: Lydia Dorko
 Position: Project Manager
 Telephone Number: 607.773.9106

For more information about the maps referred/attached to this document, please send an email inquiry to gcoss.inquires@noaa.gov.